

In the claims:

1. (currently amended) An isolated population of solid tumor stem [[cell]] cells of epithelial origin, wherein:
 - ~~(a) — the solid tumor stem cell is isolated from a solid tumor of epithelial origin, wherein said isolated solid tumor stem cell is at least 75% free from other cells of said solid tumor that fail the requirements of (b), (c), (d), and (e), below; and~~
 - (a) — the isolated population of solid tumor stem cells comprises less than 25% non-tumorigenic solid tumor cells;
 - (b) the solid tumor stem cells are ~~cell is~~ tumorigenic;
 - (c) the solid tumor stem cells express ~~cell expresses~~ CD44; and
 - (d) the solid tumor stem cells do ~~cell does~~ not express detectable levels of one or more LINEAGE markers, ~~wherein a LINEAGE marker is selected from the group consisting of CD2, CD3, CD10, CD14, CD16, CD31, CD45, CD64, and CD140b; and~~
 - ~~(e) — the solid tumor stem cell expresses lower levels of the marker CD24 than the mean expression of CD24 by non-tumorigenic cancer cells derived from the solid tumor.~~
2. (canceled)
3. (canceled)
4. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 1, wherein the solid tumor stem cells do ~~cell does~~ not express detectable levels of LINEAGE markers, ~~wherein the LINEAGE markers comprise CD2, CD3, CD14, CD16, and CD64.~~
5. (canceled)

6. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 4, wherein the solid tumor stem cells do not express detectable levels of the LINEAGE markers ~~further comprise~~ CD10, CD31, and CD140b.

7. (canceled)

8. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 1 [[7]], wherein the solid tumor stem cells are ~~epithelial cancer is a breast cancer~~ stem cells or an ovarian cancer stem cells.

9. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 1, wherein one or more of the solid tumor stem cells contain[[s]] a polynucleotide vector.

10. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 9, wherein the polynucleotide vector is a viral vector or a plasmid.

11. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 9, wherein the polynucleotide vector ~~contains~~ comprises a reporter polynucleotide.

12. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 11, wherein the reporter polynucleotide provides a detectable signal when active in a solid tumor stem cell.

13. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 1, wherein one or more of the solid tumor stem cells ~~further~~ comprises a recombinant polynucleotide.

14. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 13, wherein the recombinant polynucleotide is integrated into a chromosome of one or more of the solid tumor cells.

15.-17. (canceled)

18. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 1, wherein the solid tumor stem cells are ~~is situated~~ in a culture medium.

19. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 18, wherein the culture medium comprises a Notch ligand.

20. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 1, wherein the solid tumor stem cells are ~~cell is~~ affixed to a substrate.

21. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 1, wherein the solid tumor stem cells have ~~cell has~~ been treated to reduce proliferation.

22. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 1, wherein the solid tumor stem cells have ~~cell has~~ been treated to increase proliferation.

23. (currently amended) An enriched population of solid tumor stem cells of epithelial origin, wherein:

(a) ~~the tumor cells are derived from a solid tumor of epithelial origin;~~

(b)(a) the solid tumor stem cells are tumorigenic;

(c)(b) the solid tumor stem cell population is enriched at least 2-fold ~~relative to unfractionated tumor cells;~~

(d)(c) the solid tumor stem cells express ~~cell expresses~~ CD44; and

- ~~(e)~~(d) the solid tumor stem cell cells do does not express detectable levels of one or more LINEAGE markers, ~~wherein a LINEAGE marker is selected from the group consisting of CD2, CD3, CD10, CD14, CD16, CD31, CD45, CD64, and CD140b; and~~
- ~~(f)~~ the solid tumor stem cell expresses lower levels of the marker CD24 than the mean expression of CD24 by non-tumorigenic cancer cells derived from the solid tumor.

24. (canceled)

25. (canceled)

26. (canceled)

27. (canceled)

28. (original) The enriched population of claim 23, wherein the population is at least 5-fold enriched.

29. (original) The enriched population of claim 23, wherein the population is at least 10-fold enriched.

30. (original) The enriched population of claim 23, wherein the population is at least 50-fold enriched.

31. (canceled)

32. (currently amended) A method of ~~[[for]]~~ enriching for a population of ~~cells for~~ solid tumor stem cells, the method comprising ~~the steps of:~~

- (a) dissociating a solid tumor of epithelial origin ~~to form a cell suspension;~~

- (b) contacting the dissociated cells with a first reagent that ~~selectively binds solid tumor stem cell positive marker~~ CD44, a second reagent that binds one or more LINEAGE markers, ~~wherein a LINEAGE marker is selected from the group consisting of~~ CD2, CD3, CD10, CD14, CD16, CD31, CD45, CD64, and CD140b, and a third reagent that binds the CD24 marker; and
- (c) selecting cells that bind to the first reagent and that do not detectably bind or bind poorly to the second and third reagents wherein the selected cells are enriched in solid tumor stem cells as ~~compared with the unfractionated population of solid tumor cells.~~

33. (canceled)

34. (currently amended) The method of claim 32, wherein the first or second reagent is an antibody ~~or a lectin~~.

35. (currently amended) The method of claim 32, wherein the first or second reagent is conjugated to a fluorochrome or ~~[[to]]~~ magnetic particles.

36.-37. (canceled)

38. (currently amended) The method of claim 32, wherein the cell selection is performed by flow cytometry, fluorescence activated cell sorting, panning, affinity column separation, ~~[[and/]]~~ or magnetic selection.

39. (canceled)

40. (currently amended) The method of claim 32, further comprising ~~the step of:~~ (d) isolating the selected solid tumor stem ~~[[cell]]~~ cells.

41.-184. (canceled)

185. (canceled)

186. (canceled)

187. (canceled)

188. (currently amended) The method of claim 32 ~~[[33]]~~, wherein the solid tumor stem cells ~~are epithelial cancer~~ is a breast cancer stem cells or ~~[[an]]~~ ovarian cancer stem cells.

189.-193. (canceled)

194. (currently amended) The enriched population of claim 23 ~~[[24]]~~, wherein the solid tumor ~~epithelial cancer~~ is a breast cancer or an ovarian cancer.

195. (canceled)

196. (canceled)

197. (canceled)

198. (canceled)

199. (currently amended) ~~[[A]]~~ An enriched population of solid tumor stem ~~[[cell]]~~ cells isolated by the method of claim 40.

200. (currently amended) The isolated population of solid tumor stem ~~[[cell]]~~ cells of claim 1, wherein said solid tumor stem ~~[[cell]]~~ cells further express ~~expresses~~ B38.1 marker.

201. (currently amended) The isolated population of solid tumor stem [[cell]] cells of claim 1, wherein said solid tumor stem [[cell]] cells further express ~~expresses~~ epithelial specific antigen (ESA).

202. (currently amended) The enriched population of claim 23 [[22]], wherein said solid tumor stem [[cell]] cells further expresses B38.1 ~~marker~~.

203. (currently amended) The enriched population of claim 23 [[22]], wherein said solid tumor stem [[cell]] cells further expresses epithelial specific antigen (ESA).

204. (currently amended) The method of claim 32, wherein said selected cells are further enriched for cells expressing B38.1 ~~marker~~.

205. (currently amended) The method of claim 32, wherein said selected cells are further enriched for cells expressing epithelial specific antigen (ESA).

206. (new) The isolated population of solid tumor stem cells of claim 1, wherein the solid tumor stem cells express low levels of CD24.

207. (new) The isolated population of solid tumor stem cells of claim 1, wherein the solid tumor stem cells do not express CD24.

208. (new) The enriched population of claim 23, wherein the solid tumor stem cells express low levels of CD24.

209. (new) The enriched population of claim 23, wherein the solid tumor stem cells do not express CD24.

210. (new) The method of claim 32, wherein the selected cells do not detectably bind to the second and third reagents.